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ABSTRACT

Problems of inquiry in intercultural communication are examined in this paper, and an inquiry process is presented that can be applied to the study of communication between people from different cultures. The first section of the paper outlines major, well-documented procedural problems in intercultural communication and considers additional problems under two headings: structural and substantive. The second section discusses the general nature of the process of inquiry and outlines each of four phases in this process: observing, discovering, theorizing, and verifying. It then examines four additional phases, considered to be the joint applications of the four basic phases (empirical generalization, theory construction, theory evaluation, and empirical confirmation), shows the interrelationship of all the phases and the cyclical nature of the inquiry process, and presents a set of principles for mastering and applying the "cross fertilization" of inquiry phases. The final section of the paper discusses implications of the scientific inquiry process and its phases for the study of intercultural communication. (GT)

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METHODOLOGY IN INTERCULTURAL COMMUNICATION:

TOWARD A LOGIC OF INQUIRY

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METHODOLOGY IN INTERCULTURAL COMMUNICATION: TOWARD A LOGIC OF INQUIRY

In recent years there has been a tremendous increase in the number of publications under the general rubric of intercultural communication. People concerned with this field comprise both academicians and practicioners. Academic disciplines such as communication, sociology, anthropology, psychology, and linguistics have all had an impact on the growth and development of the field. In addition, practicioners from such areas as foreign student advising, cross-cultural training, cross-cultural counseling and English as a second language have influenced the directions of study for intercultural communication.

Given the varied interests of the people involved in the field, it is not surprising, therefore, that there is little agreement on the parameters and research methods applicable for the study of communication between people from different cultures. Saral (1977) summarizes a large part of the problem facing the field when he points out that "the newness of the field has attracted scholars from varying disciplines, who, while enriching and broadening the area, have also rendered the field so diverse and discursive that it defies definition" (p. 389). Given the great diversity, the field's intellectual evolution can probably be best classified as being in the "pre-paradigmatic" stage of development (Kuhn, 1970).

Scholars interested in the study of intercultural communication lack a historical perspective of their own and have, therefore, been forced to borrow from their sister disciplines of sociology, anthropology and psychology.[1] This has led to an eclecticism with a multitude of effects: fragmentary theory unappropriately applied research designs, questionable operationalizations of many variables, etc. If the field of intercultural communication is to increase the amount of scientific information about communication between people

from different cultures, and thus, increase its explanatory power, it needs to develop a consistently applied methodology. This is not to say that there is a need to "reinvent the wheel". Rather, for the field to continue its growth, it needs to adapt more general "methodologies" or "logics of inquiry" to the particular phenomenon under investigation.

The argument put forth in the present paper is that scientific observations are inherently theory-laden and that methodology, by definition, involves theory, research methods and the interrelationships among the two. The remainder of the paper will be devoted to specifying some of the major problems in studying intercultural communication and a beginning attempt to present a logic of inquiry that can be applied to the study of communication between people from different cultures.

Problems of Inquiry in Intercultural Communication

There currently exists a large body of literature on the appropriate procedures for conducting cross-cultural research (for example, Whiting, 1954; Sjoberg, 1955; Moore, 1961; Suchman, 1964; Naroll, 1965; Frijda and Jahoda,1966; Ford, 1967; Naroll, 1968; Berrien, 1970; Etzioni and Dubow, 1970; Holt and Turner, 1970; Naroll and Cohen, 1970; Przeworski and Terine, 1970; Gillespie, 1971; Brislin, Lonner and Thorndike, 1973; Brislin and Charles, 1977; and Triandis, in press). Further, the major problems in cross-cultural research have been well documented (for example, Lundstedt, 1962; Hudson, Bernkat and Laforge, 1963; Carter, 1966; Tajfel, 1968; Almond and Verba, 1970; Pierce and Pride, 1972; Brashem, 1975; Chu, 1976; and Lowry, 1978). The problems specified have included the sampling of subjects, the creation of cross-culturally equivalent variables, meaningfullness of test formats in other cultures, equivalence of experimental manipulations, and the difficulty in interpreting the results of cross-cultural studies due to the multitude of competing hypotheses involving

the interaction of cultural and research variables. Implicit in many of these problems is the specific difficulty of translation or cross-cultural equivalence of meanings (for example, Erwin and Bower, 1953; Phillips, 1960; Campbell, 1964; Anderson, 1967; Przeworski and Terine, 1967; Brislin, 1970; and Sechrest, Fay and Zardi, 1972).

Cross-cultural research is traditionally aimed at one of two objectives: (1) "to document valid principles that describe behavior in any one culture under study, taking into account what the people themselves value as meaningful and important. This is an emic analysis... [and (2)] to make generalizations across cultures that take into account all human behavior. The goal, then, is theory building. This would be an etic analysis" (Brislin and Charles, 1977, p. 110). However, as Porter and Samovar (1973) and Becker (1976) have pointed out, there are differences between cross-cultural and intercultural research. The focus of cross-cultural research on communication would be on communication within or across (i.e., a comparative analysis) cultures. On the other hand, research in intercultural communication investigates communication between people from different cultures. Although the differences between these two types of research may at first appear to be superficial, they are important in that they lead to different modes of inquiry.

Given the different foci of intercultural and cross-cultural research it would be predicted that there are different problems. Many of the problems in conducting cross-cultural research are also inherent in intercultural communication research (i.e., sampling of subjects, equivalence of meanings and experimental manipulations of variables. However, there are several additional problems of inquiry in intercultural communication that may be attributed to the stage of development of the discipline. These additional problems can arbitrarily be divided into two categories: structural and substantive. The structural problems include: (1) lack of trained "social scientists" special-

izing in intercultural communication, and (2) an artificial division between practicioners and academicians in the field. On the other hand, the substantive problems are: (1) lack of agreement on the parameters of the field, (2) lack of generalizations and/or theory, and (3) lack of appropriate research strategies.

Structural Problems

The first major structural problem of inquiry in intercultural communication is the lack of trained social scientists in the field. Brislin and Charles pointed to a part of the problem when they argued:

> Our opinion is that cross-cultural research, especially on intercultural contact, is hampered because of the paucity of potential investigators who have a solid grounding in methodology. Just one reason for the lack is that the sorts of behavior needed to become a good methodologist (reading, study, starting as a research assistant and 'working up' over a period of years) are quite different from the sorts of behavior necessary for effective intercultural relations (friendly demeanor, empathy, openness to new experiences) (1977, p. 111).

However, the problem is not as simple as Brislin and Charles analysis would suggest. The lack of trained social scientists is not only due to differences in desirable behaviors, but also to the fact that intercultural communication is not presently institutionalized in academic settings.[2] Currently there are only a handful of schools where a student can work on a Ph.D. with a major specialization in intercultural communication. The lack of scholars specifically trained in intercultural communication has lead to a lack of strong "role models" for those graduate students currently studying intercultural communication. This suggests that there is a need to create a "critical mass" of social and behavioral scientists specializing in intercultural communication by institutionalizing its study in colleges and universities in the United States (see Howell, 1975, for a discussion of this need might be met). The development of a critical mass of intercultural communication specialist in colleges and

universities is probably a precondition to the solution of the remaining structural and substantive problems discussed.

The second major structural problem of inquiry in intercultural communication is the artificial split between practicioners and academicians. The origins of the field of intercultural communication can probably be traced to practical problems which needed solutions (i.e., problems of adjustment in other cultures). This is a trend which apparently continues today. Smith (1977) has pointed out that the vast majority of the people studying intercultural communication are mainly interested in practical application. He argues:

> Their first priority is practice. They look for what they can use immediately or indirectly. They are generally oriented to improving their skills in intercultural communication. For this they study languages, cultures, and theories. They are less interested in theories and research as purely intellectual or academic interest: Their primary concern is the improvement of such things as adult education or even the analysis of Hollywood films to advise the producers what these films will mean in Iran (Smith, 1977, p. 4).

The practical application emphasis in intercultural communication is, in large part, due to the action orientation of the people in the field. Smith (1977) goes on to point out that "Even the purely academic researchers and theorists are largely involved as training practicioners" (p. 3). Stewart (1977) would appear to agree when he suggests that "The first realistic conclusion we can reach is that development in the field will probably center on training" (p. 2). The position of the present paper is that although the focus of the field may be on practical application, this does not negate a need for rigorous research and theory. Rather, it accentuates the need.[3] Although theoretic and action research often appear to be aimed at different ends, their results are, ideally, complementary.

Substantive Problems

The first major substantive problem in the field of intercultural communication involves the lack of agreement on the parameters of the field (i.e., a

definition of the field. The problems in defining intercultural communication are similar to those of defining communication in general (for example, see Miller, 1966; Dance, 1970; and Scott, 1977). Maletzke views intercultural communication as "an exchange of meaning between cultures" (1970, p. 478). Other definitions include: "communication between groups with different value structures" (Jain, Prosser and Miller, 1974, p. 33); "cultural variance in the perception of social objects and events" (Porter and Samovar, 1976, p. 4); and "interaction between members of differing cultures" (Sitaram and Cogdell, 1976, p. 18). These different definitions are important in that how a person defines a field not only influences his/her conceptualizations, but how he/she approaches research. Saral (1977) has alluded to this when he argues:

> On the one hand, one cannot but feel overwhelmed by a huge number of studies dealing with the variables that, in one fashion or another, affect the process of intercultural communication. On the other hand, one is struck by the lack of specific focus or direction in such studies (p. 393).

It is our contention that the absence of a focus in the field can be traced to a lack of agreement on the parameters of the field.

The second major substantive problem in the field follows directly from the first and involves a lack of generalizations and/or theory about communication between people from different cultures. As would be expected, given the lack of accepted definition for the field, no theories of intercultural communication exist. Rather, the focus of recent writings in the field has been on a number of sensitizing concepts that provide a framework for beginning to analyze intercultural communication. Sensitizing concepts, as characterized by Williams, "convey a sense of reference and orientation grasped through personal experience" (1973, p. 243). The major problem with the utilization of these sensitizing concepts (for example, "value orientations", "assumptions", "sets of expectations", and "patterns of thinking" to name a few) is that they are often discussed in isolation and not <u>directly</u> related to each other or to the process of inter-

cultural communication. It is one of the major contentions of this paper, that if the study of intercultural communication is to increase its explanatory power, it needs to move from the examination of sensitizing concepts toward the development of a consistent theoretical framework for the analysis of communication between people from different cultures.[4]

The final substantive problem in the study of intercultural communication involves the lack of appropriate research methodologies for the study of communication between people from different cultures. This is highly interrelated to the problems previously discussed, but, in addition, has some unique aspects of its own. The lack of appropriate research strategies is obviously related to a shortage of scholars to develop them (the first structural problem), a lack of agreement on the parameters of the field and an absence of theories (the first and second substantive problems). In addition, the lack of appropriate research strategies has also been a contributing factor to the other problems, especially the development of theories. Merton points to this when he argues:

> It is my central thesis that empirical research goes far beyond the passive role of verifying and testing theory: it does more than confirm or refute hypotheses. Research plays an active role: it performs at least four major functions which help shape the development of theory. It initiates, it reformulates, it deflects and it clarifies theory (1967, p. 157).

Thus, theory not only influences the research conducted, but research also influences theory.

The lack of appropriate research methods is not a problem unique to intercultural communication, it is also evident in the general discipline of communication as a whole. The major problem comes in studying process. Berlo characterizes process as follows:

> If we accept the concept of process, we view events and relationships as dynamic, on-going, ever-changing, continuous. When we label something as process, we also mean that it does not have a beginning, an end, a fixed sequence of events. It is not static, at rest. It is moving. The ingredients within a process interact; each affects all of the others (1960, p. 24).

The major research methods utilized in communication, in general, and intercultural communication specifically, do not capture the process nature of the phenomenon. For example, research methods (i.e., survey questionnaires, interviews, etc)[5] and statistical procedures (i.e., analysis of variance, path analysis, etc) are aimed at cross-sectional, structural analysis rather than longitutinal, process analysis which involves the studying of changes over time. Therefore, any appropriate research methods for the study of intercultural communication should be based on a process oriented logic of inquiry.

With the above structural and substantive problems in mind, the next section of the paper will focus on the process of scientific inquiry. It is our contention that by more systematically applying the process of scientific inquiry to the phenemenon under study (i.e., communication between people from different cultures), the field of intercultural communication will have a powerful instrument for the accumulation of knowledge.

A Logic of Inquiry

Scientific inquiry is a deliberate process of actively and systematically extending knowledge about the world. It consists of a number of distinct phases or steps which allow progressive improvement of this knowledge. The ultimate result is an evolutionary spiral of activity yielding a never-ending series of better successive approximations. In this section we will explore the implications of an endeavor of this type. We will begin with a discussion of the general nature of the process of inquiry in order to lay a framework for later discussions. Then we will present each of the phases in this process and trace important interrelations. Finally, we will show how these inevitably lead to a spiral of successive approximations.

The Process of Inquiry

Scientific inquiry is a dynamic adaptive process rather than the routine

following of a fixed recipe. Yet it is merely an extension and refinement of the processes involved in everyday living rather than some alien alternative. It is also a social endeavor which results in a collective product rather than a set of isolated individual contributions. Each of these stated characteristics will be discussed more fully below.

A Dynamic Adaptive Process

Scientific inquiry is a deliberate concerted attempt to extend the known to incorporate what was previously unknown. The reason that this is so difficult and challenging is the unanticipable nature of this slowly emerging world. Conventional rules and recipes are often impotent in the face of the emerging strangeness. In addition, the different phases of inquiry (theorizing and observing, discovering and verifying) continually merge and interact in creative adaptation. Every area of inquiry offers fresh and unpredictable variations which require a situational solution based upon a sensitivity to the process of successfully inquiring. No handbook of fixed rules and standard recipes could possibly anticipate the required solutions. However, if the purpose and process are truly understood, each "scientist" can self-construct the required solutions and self-judge the required decisions. This is possible because, as will be next discussed, scientific inquiry is based upon everyday processes and is a social, not a solely individual, product.

Extensions of the Everyday

Scientific thinking is similar to everyday methods of dealing with the world. Each of us observes, generalizes, theorizes, and adjusts ideas on the basis of continuing experience. However, social science is not identical to everyday techniques; it is an extension and refinement of everyday processes. Science is deliberately empirical, systematic, comparative, and objective in ways which go beyond everyday efforts. It is <u>empirical</u> because all knowledge is held to

come from sense data; i.e., ideas are checked by going and observing rather than merely reflecting or contemplating. In contrast, people in everyday life can rely upon intuition, revelation, and unsubstantiated belief. It is systematic because knowledge is sought in a consistent and comprehensive fashion with conscious effort to examine and interrelate all aspects. In everyday life, people are usually satisfied with incomplete and non-integrated knowledge if their immediate objectives are met. It is comparative due to its emphasis that knowledge comes from careful delineations of similarities and differences; i.e., perceived regularities are confirmed by repeated efforts of controlled comparison. In everyday life limited exposure or experience is often treated as definitive and universal truth without corroboration. It is objective since only public knowledge is acceptable, and any knowledge must be verifiable by anyone who repeats the process. In contrast, people in everyday life can, and must, make use of private and uncommunicable knowledge about the world based upon their own unique experience. Again, science deliberately extends and refines processes found in everyday life and the result of such a concerted effort along the indicated lines is an extremely powerful tool of knowledge accumulation far beyond the scope of normal everyday efforts.

A social endeavor

Because scientific knowledge is necessarily public (relying upon replications for confirmation of knowledge status), it is unavoidably a social enterprise. Each effort at inquiry starts from a foundation established by the previous efforts of many others. This scientific heritage impacts at virtually every point of the process from observing through theorizing. Scientists are the products of a long period of intense socialization, in which they learn their craft as a full experience based as strongly upon exposure to personalities, attitudes, roles, and norms, as upon textbooks and journals. The process of inquiry is best thought of as a continuing dialogue between the scientist and

all other scientists. Science is a large-scale collective enterprise in which participants must deliberately shape their efforts to take into account the activities of all other participants and in which the entire social effort moves in commonly agreed directions. Robinson Crusoe could not be a scientist as long as he was isolated from the rest of the scientific community; his findings could not achieve knowledge status until they had been made public by replication and confirmation efforts of other scientists.

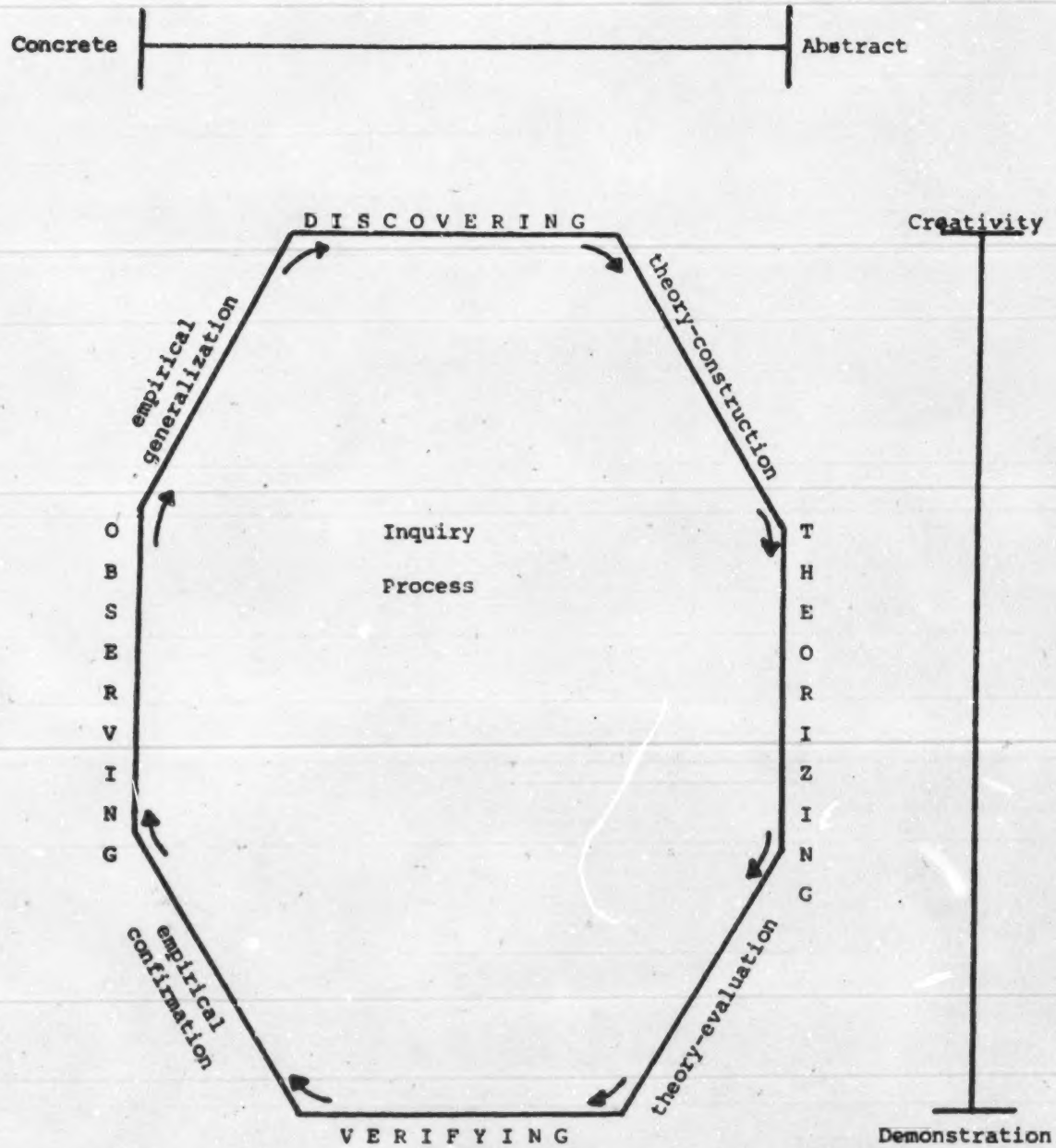
In review, the process of inquiry is dynamic and adaptive rather than the following of a fixed set of rules. It extends and refines everyday processes in order to produce a very powerful tool for knowledge accumulation. Finally, it is a social process rather than a purely individual one. With this background we are ready to move to a more specific consideration of the steps in this process.

The Phases of Inquiry

Inquiry is a comprehensive integrated activity. Each phase is intimately related to every other phase so that problems and solutions in a specific phase have immediate ramifications for the other phases. There are many ways to divide the process of inquiry for discussion purposes. One useful way is depicted in Figure 1. Immediately it can be seen that the process of inquiry is wheel-like, suggesting its cyclical nature. The shape is octogonal implying that inquiry is multi-faceted, while the integrity of the basic process is symbolized by the undifferentiated body of the wheel. There are eight phases or steps in the process: observing, empirical generalization, discovery, theory-construction, theorizing, theory-evaluation, verifying, and empirical confirmation.[6] However, the phases can be divided into two different groups as symbolized by the use of capitals for four of the phases and small letters for the other four alternating phases. The capitalized phases are the crucial subprocesses in inquiry and the other four phases are derived from them. For this reason we refer to these capitalized phases as "the four foundations." Each

FIGURE 1

A Process of Inquiry



will be discussed in detail below. For now we need only note that the relationships between these phases can be described in part by the two sets of arrows above and to the right of the wheel. The top arrows show a continuum from concreteness to abstraction which captures the tension between observing and theorizing. The side arrows show the dichotomy between discovering and verifying which illustrate the dilemma between the demands of creativity and demonstration. We refer to the remaining four phases as "the joint applications" because each is the immediate product of the two adjoining foundations. For example, empirical generalization is the joint result of observing and discovering, while theory-construction is the combined product of discovering and theorizing. This graphic illustration of the interpenetration of the phases could be extended even further. In the example just given, discovering is involved in both empirical generalization and theory-construction activities. In fact, when the dynamics implied by the arrows are integrated with the dynamics implied by graphical contiguity, virtually every phase is affected by every other phase. However, this complexity emerges from a few simple principles which can be applied by anyone familiar with the separate phases and interactions implied by the figure. In the following sections, we will discuss each of the four foundations, and then we will turn to a consideration of the four joint applications. Finally, we will review the chart and its basic principles, in the light of this background.

The Four Foundations

The four foundations are observing, discovering, theorizing, and verifying. Each will be discussed individually, then the tensions between the pairs will be more directly approached.

Observing is essentially the interaction between the concrete world and the active mind. It is an active process since it never involves mere passive

storage of experience but always an active sorting and organizing of experience which is then collected and stored. It can emphasize the generation or discovery of patterns or it can emphasize the verification of extension of previously noted patterns. In any case, the concrete experience constrains and shapes what is collected and stores; resulting in regularities which can be noted and exploited.

Discovering is the attempt to trace previously unnoted patterns and interrelations. This is a necessarily indeterminate endeavor. The concrete universe is characterized by uncountable patterns and an infinite number of notable interrelations between them. Any of these patterns or relations could possibly be explored usefully. However, this concrete world is always viewed through a cognitive filter which emphasizes a few previously noted patterns and relationships to the exclusion of other previously noted patterns and relationships on the practically infinite previously unnoted ones. Even where a relatively open mind is maintained, the overwhelming magnitude of alternative possibilities is bewildering, especially since there is a dearth of knowledge about classes and hierarchies of relationship among concrete phenomena. Ultimately, reliance for discovery purposes must be as much upon heuristic, subjective, intuitive, and serendipitous strategies as upon anything more systematic. This, of course, follows from the very nature of logical thought as opposed to what is often called judgment. The focusing nature of strict logic and system are a two-edged sword. The great power to manipulate and exploit situations which are reasonably simple and well-defined can be blinding and sterilizing in situations which do not meet these constraints. A business executive, for example, must often make decisions with incomplete knowledge about a complex fast-changing situation. Clearly, this person must often rely upon judgment based upon experience and intuition about that experience. Such decisions are successfully made every day without an ability to explicate the basis for the decision in

any satisfactcry manner, particularly from the rigid constraints of a scientific point of view. Similarly, the discovery of new patterns and interrelations even in science is acknowledgeably based upon decisions and judgment about complex dynamic situations of which the knowledge is blatantly fragmentary. Discovering, therefore, is a creative act that brings order out of what was previously random and chaotic. It is impossible to specify any rigid rules for scientific discovery beyond the one P.W. Bridgman gave for doing science in general: "Science is the act of doing your damnest with your mind." (For an introduction to the process of discovery, see Hanson, 1958; Gibson, 1960; Popper, 1961; Kaplan, 1964; Sjoberg and Nett, 1968; Greer, 1969; Diesing, 1972; and Miller and Nicholson, 1976.)

Theorizing is the active exploration of interrelations among the noted patterns of regularities for the purpose of explanation or understanding (Kaplan, 1964). It is inherently predictive although this is a matter of degree ranging from a general pointing to rigorous criteria of validity and reliability. This active exploration tends to be comprehensive and systematic. However, it is abstract and free of the external constraints and regularities involved in a more empirically grounded phase such as observing. Therefore, order is imposed by attempts to be comprehensive and systematic. Within these constraints theorizing traces interrelations by creating theoretical structures, by exploring relations among different theoretical structures, and by explicitly embedding given theoretical structures in general contextual models of reality, both concrete and abstract. Theorizing in a given area tends to begin at a single level with the noting of a few important empirical generalizations and simple exploration of their interrelationships. Over time the cycle of inquiry achieves many interactions, each of which successively refines and extends the previous theorizing. Eventually theorizing in a heavily worked area becomes very powerful, subtle, and complex.

Verifying is the sifting of competing assertions and explanations in order to explore, clarify, and extend knowledge about patterns and interrelations. Through the use of strategic comparisons and rigorous criteria of evidence, knowledge claims may be examined effectively and efficiently. Although current verification techniques are in a process of continual evolution and entail certain narrow a-sumptions about the nature of social phenomena, they constitute the social standards of a given historical period which must be met to participate in the collective search for knowledge. In any case, verifying is an explicit attempt to confer knowledge status upon assertions and explanations by the systematic examination of evidence according to strict criteria.

The creative tensions among the four foundations must be emphasized. There are two basic oppositions: observing versus theorizing on the basis of creativity and demonstration. Observing is necessarily concrete, while theorizing is unavoidably abstract. Yet observing is always shaped by theoretical assumptions as to what is worth noticing, and theorizing is always constrained to making statements groundable in concrete observations. This mutual interactive influence is often hard to separate, and the best that can be accomplished is to identify the shifts in relative emphasis between the two phases. The dynamics between discovering and verifying follow similar lines. Discovering is primarily creative with a necessary emphasis upon intuition and heuristics. In contrast, verifying is based upon rigorous demonstration in a typically logical and systematic fashion. However, discovering is always constrained to the production of patterns and interrelations which can be explicitly examined, while verifying is inherently a creative process which suggests new alternatives through qualifying the old. That each of the four also interacts with the other two not in direct opposition has already been noted, and will be explored in the following discussion of the joint applications.

The Joint Applications

The joint applications are empirical generalization, theory-construction,

theory-evaluation, and empirical confirmation. Each will be discussed individually both as a product of its two adjacent foundation phases and also as a distinct phase in its own right.

Empirical generalization is the non-straightforward task of going from experience with a phenomenon to a perception of a pattern or set of patterns embodied in the phenomenon. It is a joint product of observing and discovering. Because it is observational, it involves an interaction between the concrete world and the active mind. This means that the characteristics of both are intimately and almost inextricably involved in the outcome. Because it involves discovery, conventional habits and rules must often yield to intuition and deliberate search for novelty. Empirical generalization is more than a simple induction from the specific to the more general. The possible types of patterns are infinite and any classification of patterns is always arbitrary and only more or less useful. Perhaps this can best be illustrated by examining two important patterns which are all too often incorporated in empirical generalizations about the world: linearity and determinism. For our purposes, the assumption of linearity states that relationships between different aspects of reality will be simple, direct, and proportionate. The great bulk of our technological accomplishments rest upon the exploitation of those areas of experience where such linearity holds. However, much evidence suggests that most of the physical world and almost all of the social world fails to exhibit such linearity (Bertalanffy, 1968). A number of researchers are embarked upon efforts to incorporate non-linear relationships into their areas (for example, see Loik and Meeker, 1975). The deterministic ways of thought fall into two separate but interrelated strands: simple cause-and-effect thinking and deterministic-versus-stochastic processes. The simplistic sequential chains of variable interaction which were so useful in the earlier development of the physical sciences, have largely been superseded in modern physical sciences and social sciences (Heisenberg, 1958; Buckley, 1967). In place of the classic cause-and-

effect model, modern science tends to use a system model, which emphasizes interdependence with consequent joint effects and adjustments for all aspects of the system. This system model can be viewed as an extension of the simple cause-and-effect model to incorporate multiple causes and multiple effects operating simultaneously in varying degrees and a refinement of the simple patterns immediate unidirectional action to include complex, continuous and discontinuous, direct and indirect patterns of interaction. This more realistic but more complicated model of reality reflected in the system model is enhanced even further by the shift in modern scientific models from deterministic to stochastic processes. This can be seen in the shift from cla-sical mechanics to quantum mechanics in physics, from Mendelian to population genetics in biology, and from case studies to population surveys in the social sciences. (For an introduction to stochastic processes in the social sciences, see Bartholomew, 1973).

Each of these new developments incorporates and qualifies the earlier formulation rather than invalidating it. The deterministic models are typically shown to be a special case holding only under a set of highly specific conditions. The world seems to be inherently probabilistic and composed of event-patterns exhibiting only statistical regularities rather than individual predictability. Conceptually, this shakes both intellectual and emotional security almost as strongly as did the space and time relatizations resulting from the work of Copernicus and Einstein. What it means is that absclute certainty about the future is never attainable in science or in life. There is always an untameable random element which can and ultimately will upset any contingencies. More specifically, no individual future event can ever be guaranteed or predicted with total certainty. As with non-linearity, many scholars are developing and applying stochastic models to the different areas in the sciences. As we noted earlier, most available research methods are not directed toward the studying of changes over time, and it is precisely

in this aspect of longitudinal process that the conventional assumptions of linearity and determinism fail most clearly. This long discussion of linearity and determinism was meant to accomplish two things. First, it introduces crucial developments which are all too little incorporated by most social scientists even when they recognize the validity of the arguments. Second, and most important, they illustrate the dangers of conventionalized thinking in observing and discovering. Initial solutions of convenience such as linearity and determinism become solidified into definitive and almost unchallengable descriptions of reality (Berger and Luckmann, 1966; Kuhn, 1970). With this background on the potentially unlimited variety of patterns of relationship mediated by an awareness that certain conventionalized patterns establish hard-to-overcome cognitive biases, we move to a consideration of theory-construction.

Theory-construction is an abstract extension of empirical generalization. It deals with patterns of relationship between empirical generalizations as opposed to patterns of relationship between aspects of concrete phenomena, and is a similarly non-straightforward task of perception. It is a joint product of discovering and theorizing. The discovery elements emphasize the creative, intuitive, and heuristic nature of the endeavor. Because it involves theorizing, there is an active exploration of interrelations between empirical generalizations; theory-construction develops theoretical structures detailing these interrelations between empirical generalizations, between different theoretical structures, and between given theoretical structures and general contextual views and assumptions about reality. All of the points discussed in regard to empirical generalization also apply here. We need merely to extend that summary: the potential variety of patterns of relationship between empirical generalizations is virtually unlimited, and the few conventionalized ideals of theory-construction establish ultimately unproductive cognitive biases (Kaplan, 1964).

Theory-construction requires understanding of the differences among theoretical structure, theories, and theorizing. Theoretical structures may range from general orientations which simply point out important variables to formal deductive systems of interrelated propositions (Merton, 1957). In general, the degree of specificity and formalization will be related to the achievement of a paradigm, that is a detailed body of knowledge in an area with general consensus on both methods and theory (Kuhn, 1970). A theory includes both a specific theoretical structure and also an often unexplicated set of contextual relationships and assumptions about reality which details how to use the theory. Theorizing is the process of developing, applying, or evaluating theories, that is, actively exploring interrelationships at different levels of and abstraction. Theory-construction is thus the developmental phase of theorizing; it emphasizes development of theoretical structures and tracing of the set of contextual relationships and assumptions.

Two important issues in theory-construction are formalization and comprehensiveness. Formalization is in essence the attempt to show how an apparently formless and chaotic set of relationships exhibit an order which becomes apparent when examined using the specifications of a selected systematic scheme. This scheme may be a mathematical model, (Liek and Meeker, 1975), axiomatic logic (Zetterberg, 1965), general system theory (Bertalanffy, 1968), general action theory (Parsons, 1951) or a rules approach (Cushman and Whiting, 1972). The important thing is to bring order to chaoes not to militantly advocate one true system such as deductive axiomatic over all others. (For an introduction to the many theory construction techniques available, see Stinchcombe, 1968; Blalock, 1969; Dubin, 1969; Reynolds, 1971; and Hage, 1972.) Comprehensiveness is in essence simply the recognition that everything in the universe is related to everything else. It is inherently impossible to bring the full implications of this relatedness into any theoretical structure or systematic schema. Instead, one attempts to anchor a given set of generalizations in the context

of other crucial theoretical aspects.

Theory-construction is an abstract creative endeavor. Successful theories of the past should be sources of stimulation rather than blind emulation. The ultimate criterion for judging theories is usefulness for the purpose at hand not degree of correspondence to theories designed for other areas and other times. We will now consider the issues involved in evaluating theories that have been constructed.

Theory-evaluation is the attempt to demonstrate the usefulness of specific theoretical efforts and to establish criteria for selecting the most useful from a group of alternative theories. It is combined effort of theorizing and verifying. Because it is theoretical, it is an exploration of interrelations between generalizations. Since it also includes verification, it involves sifting among competing assertions and explanations. Theory-evaluation generally involves the application of standards of substantive usefulness and standards of logical adequacy. The substantive usefulness if reflected in adoption and development by other researchers in the same area and by demonstrated ability to generate testable hypotheses, that is, assertions which are amenable to empirical confirmation. Logical adequacy is based upon assessing the degree of completeness and consistency (Zetterberg, 1965). Many current theories in the social sciences seem unable to combine both substantive usefulness and logical adequacy and instead sacrifice one for the other. However, both are necessary for a successful theory. Theory-evaluation is the process of assessing available theories on substantive and logical criteria in order to determine the best choice for future development and application.

Empirical confirmation is the careful process of assembling and weighing evidence in order to accept, reject, or qualify assertions about empirical phenomena. It is the joint product of verifying and observing. Because it is observational, it involves an interaction between the concrete world and the

active mind. Because it is the observations are tightly structured so that knowledge claims may be examined in as effective and as efficient a manner as possible. Empirical confirmation usually involves four steps: hypothesis-formation, research design, data gathering, and data analysis. Hypothesis-formation is the selection of an empirical assertion for observational examination. This empirical assertion may be a fairly concrete empirical generalization or empirical specification derived from abstract theory. Since all observing is at least implicitly directed by theory, the most fruitful hypotheses are usually those explicitly generated by theorizing.

Research design is probably the key step in empirical confirmation. It is the process of ensuring that strategic comparisons of evidence are actually accomplished. All research designs must be grounded in the "experimental model" for acceptable demonstration that strategic comparisons have been truly made. This model was historically derived in laboratory experimentation, and derives its name from this fact, but it essentially incorporates the sophisticated product of hundreds of years of scientific experience in research design for the purpose of making strategic comparisons. The label is retained here because it is commonly identified as such and because the laboratory experiment does represent a clear and useful introduction to its successful application. Perhaps the classic treatment of research design in the social sciences is Campbell and Stanley's (1963) Experimental and Quasi-Experimental Designs for Research, which presents a comprehensive examination of the most important issues of internal and external validity and their resolution in sixteen common research designs.

Data collection is the actual gathering and recording of observations within the constraints of the research design. The actual nature of the observations required and the techniques used may vary widely. These are largely a function of the nature of the hypotheses, that is, of the empirical assertions being examined. There is a vast literature on the different techniques (for general

guides, see Blalock and Blalock, 1968; Lofland, 1971; Babbie, 1973; Kerlinger, 1973; Hirsch, Miller and Kline, 1977; Miller, 1977; and Bailey, 1978).

Data analysis is the weighing of the evidence from the controlled comparison. Hypotheses can never be proven or disproven. Rather, a given hypothesis, as a result of confirmatory examination, is specified in regard to those conditions under which it is supported and those under which it is not supported. It is this process of directed examination of hypothetical assertions in order to achieve a more accurate reformulation that is the cornerstone of scientific progress. The theory that generated a hypothesis often must be reformulated when its hypothesis is translated into a knowledge statement specifying restricted conditions of applicability. This constitutes crucial feedback for the advancement of scientific knowledge.

The area we are calling empirical confirmation is what is traditionally referred to as "the scientific method." However, we contend that the process of inquiry encompasses far more and, due to its integrity, the process must be understood in its entirety so that the creative elements are accorded as much weight as the validating elements.

In summary, Fugure 1 symbolizes the integrity of the inquiry process. It shows the eight phases in the typical sequence of activation. However, each phase is intimately related to the adjacent phase, being either the product of or producing two other phases. In addition, the arrows symbolize two other sources of creative tension and interaction. Theorizing and observing interpenetrate each other constantly in a dialogue between the concrete and the abstract. Discovering and verifying cross-fertilize each other as creativity ensures a bountiful harvest while demonstration separates the wheat from the chaff and thus selects the best candidates for future bumper crops.

The Inquiry Spiral

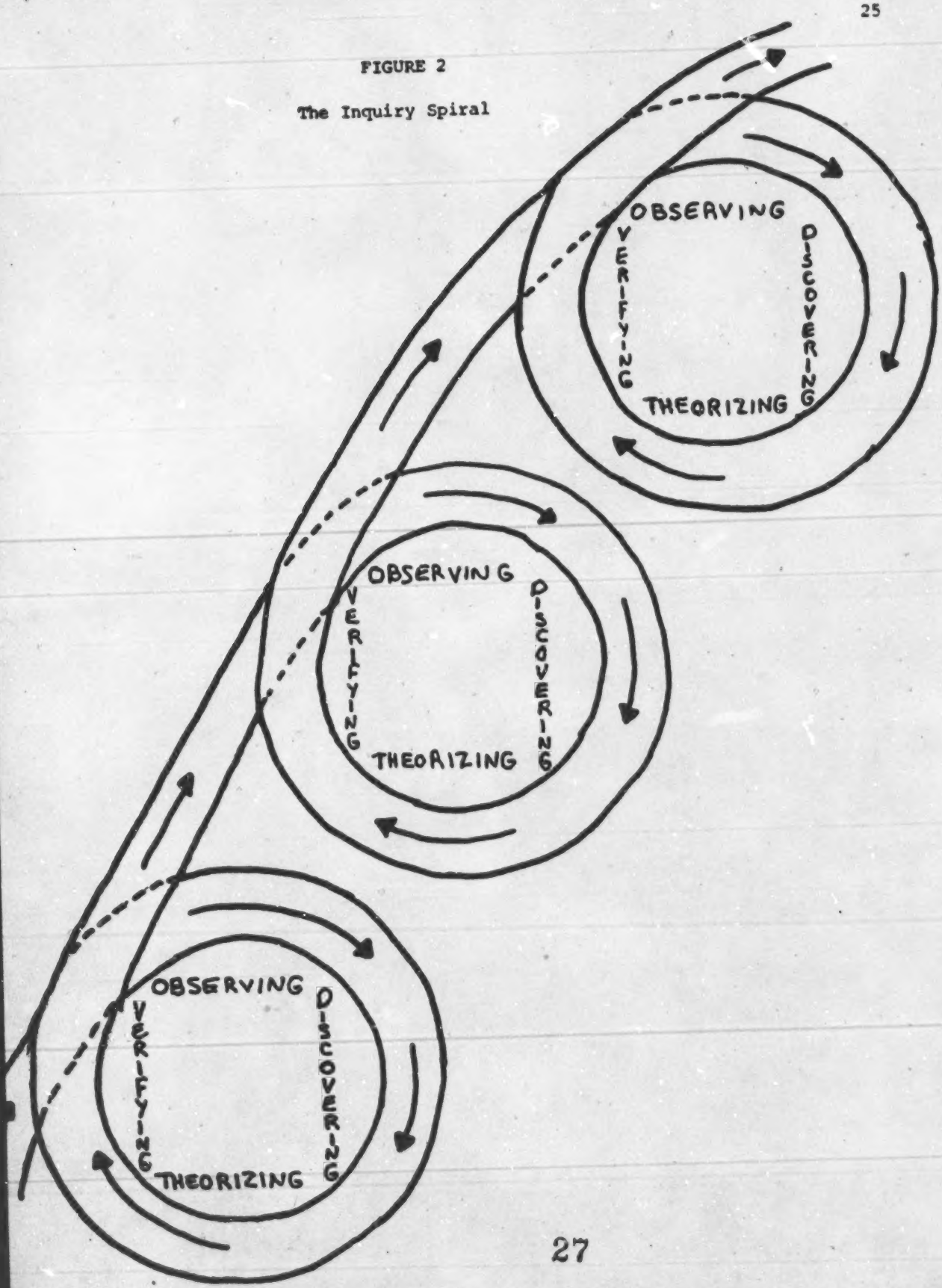
We have carefully examined one cycle in the inquiry process. However, the

knowledge from one cycle opens new horizons of knowledge possibilities and another cycle begins from this improved base. In fact, since science is a social endeavor the cycle must be picked up not only by the individual scholar, but by many others. This progressive sequence of improving cycles is best thought of as a spiral. In fact, this central image of the inquiry spiral is implicit in the idea of science as an evolutionary enterprise developing better knowledge of the world through a never-ending sequence of better successive approximations. Figure 2 suggests graphically this spiral of inquiry. The crucial element is the social nature of the enterprise. Each of us can make only a limited contribution to any area, but others can in turn build upon that contribution and make further contributions. Science is successful precisely because a set of limited contributions is socially organized into an enforced piggy-backing which creates the spiral of research. The principal characteristics of scientific thinking enforce this. Its empirical nature provides a common point of reference for discussion and resolution of disagreements. Its systematic nature forces it continually to accommodate emerging perspectives and situations and to incorporate them. Its comparative nature sets strong criteria of evidence for knowledge statements and disagreements about them. Its public nature ensures that all members of the scientific community both can and must be participants in the advance of the discipline.

In conclusion, we have presented in this section a brief introduction to the inquiry process. We suggest that it is a deliberate process of actively and systematically extending knowledge about the world. We characterized eight phases in this process which are closely intertwined. We pointed out ways in which this occurred and tried to present a simple set of principles for creatively mastering and applying this integral cross-fertilization. Finally, and perhaps most importantly we suggested that science is inherently a social endeavor and it is precisely this feature that makes it a successful evolutionary enterprise.

FIGURE 2

The Inquiry Spiral



Implications for the Study of Intercultural Communication

In this section we will specify some of the implications of our view of the process of inquiry for the study of intercultural communication. It should be noted at the outset of this discussion that we are assuming that the study of communication between people from different cultures is and should be a social scientific endeavor. We will begin by examining the implications of the scientific inquiry process. As presented above, scientific inquiry is (1) a dynamic adaptive process, (2) an extension of the everyday and (3) a social endeavor.

The Inquiry Process

By accepting the idea that the study of intercultural communication is a dynamic adaptive process we inherently recognize that what was defined as intercultural communication theory and research 10 years ago is different than what is defined as such today (and it will be different 10 years from now). The reason for this is that any area of scientific inquiry is constantly changing over time due to the nature of the process of inquiry (see Kuhn, 1970). Inquiry is a deliberate attempt to accumulate knowledge which moves slowly. The frustration often expressed by students and scholars with respect to lack of tangible progress in the field (for example, Saral, 1977, p. 394) is a natural by-product of the inquiry process. Today's frustrations become tomorrow's fruitful directions of research, although not as quickly as many of us would like.

By accepting the idea that the study of intercultural communication is an extension of the everyday, we recognize that it is a deliberately empirical systematic, comparative, and objective process. Given the current stage of development, there is a large proportion of the literature in the field which does not extend everyday ways of dealing with the world. For example, publications in intercultural communication are still filled with anecdotes from the writer's last intercultural sojourn, rather than extensions of his/her everyday experiences. If the study of intercultural communication is to advance its

development, people in the field need to recognize that: (1) knowledge comes from empirical observation rather than mere reflection or contemplation; (2) observations should be done systematically with replications, building on each others work, and not on totally unrelated pieces of research; (3) comparisons of regularities and differences are needed (i.e., how is Japanese-American communication similar to and different from Japanese-Japanese and American-American communication), and (4) inquiry must be objective (i.e., done such that others can replicate the study) and involve common, rather than private, knowledge. The lack of extension of the everyday present in the literature is directly related to the substantive problems in the field previously discussed (lack of agreement on the parameters of the field, lack of generalizations and/or theory, and lack of appropriate research strategies). All three problems can be specifically linked to a failure to adequately extend everyday experiences in the field. For example, the lack of parameters or accepted definition for the field can be seen as due to a shortage of empirical observations made in a systematic manner. Given the great diversity of people in the field, there is a tendency for everyone to "do their own thing", rather than systematically build on the work of others. If the field is to advance, we must begin to view inquiry into communication between people from different cultures as a cooperative, social enterprise where current researching and theorizing builds upon the previous work of others in the field.

By accepting the idea that the study of intercultural communication is a social enterprise we recognize that every research effort starts from a foundation established by previous efforts of others. It is this heritage of previous work that eventually will allow us to make generalizations and develop theories. Since science is a social endeavor there are several implications related to the structural problems in the field discussed earlier (lack of trained social scientists specializing in the field and the artificial split between academic-

ians and practicioners). It would appear that one of the major reasons for both of the structural problems discussed is a lack of (or at least a shortage of) communication between people in the field. There currently is a need for (1) more interaction among people in the field and (2) more centralized publication of researching and theorizing. There are three associations which deal either directly or indirectly with intercultural communication: (1) Division V of the International Communication Association (ICA), (2) The Commission on International and Intercultural Communication of the Speech Communication Association (SCA), and (3) The Society for Intercultural Education, Training and Research (SIETAR). These three organizations do not always focus on the same aspects of intercultural communication and, in fact, they appear to serve different clients.[7] If the field of intercultural communication is to develop a clear focus of study, there is a need for more interaction among the membership of these three groups (i.e., such as this summer conference co-sponsored by the three major organizations). In addition, there is a need for more centralized publication of work done in the field. Currently there is only one journal (The International Journal of Intercultural Relations published by SIETAR) and one annual (The International and Intercultural Communication Annual published by SCA) which deal directly with work done in intercultural communication. In addition, research can be found in other international journals (i.e., Journal of Cross-Cultural Psychology) and "practicioner" oriented publications (i.e., Exchange, The Bridge, and Topics in Culture Learning). However, there are very few, if any, articles appearing in the major journals in the field of communication (i.e., Human Communication Research and Communication Monographs).[8] With such limited forums for publication of research and theorizing in intercultural communication it is difficult for people in the field to inform their colleagues of their work and, thus, allow us to build upon the work of others.

There are two additional implications of viewing intercultural communication as a social science which should be noted. First, in viewing the field as a social science we recognize the need to begin to specify how it fits in with the discipline of communication and the other social sciences in general. Is intercultural communication a sub-area of communication, as would be suggested by the departmental listings of most intercultural communication courses in colleges, or is it an interdisciplinary field with no strict academic boundaries? Obviously, given the make-up of people in the field, intercultural communication is interdisciplinary, but does this rule out its also being a sub-area of communication? The question becomes one of where scholars interested are going to focus their efforts; if there is no focusing of efforts, there will never be an accumulation of knowledge. Second, in the near future, the field must begin to develop structures which will allow for the long periods of intense socialization of our graduate students so that they can better learn the craft of doing social scientific inquiry in intercultural communication.

The Phases of Inquiry

The craft of doing social scientific inquiry in intercultural communication requires a thorough working knowledge of the different phases of inquiry. In the following discussion we will focus on the implications of the joint applications (empirical generalizations, theory construction, theory evaluation, and empirical confirmation) for the field of intercultural communication.

Empirical generalization involves going from experience with a phenomenon to the perception of patterns in the phenemenon. The majority of generalizations which have been made in the field involve what Becker (1976) terms communication within a culture (for example, Johnson, 1971; Morsbach, 1973; Doi, 1973; Holmes, 1976; etc.). Further, most of these generalizations have been deterministically oriented and have not captured the process nature of the phenomenon. If we in intercultural communication are to begin to capture the process nature of the

phenomenon we are studying, we must begin to utilize probabilistic, stochastic models which can examine change over time. Although these complex models are more desirable (in that they tend to correspond better with social reality), any model utilized which yields generalizations should be seen as useful. We must begin to make tentative generalizations if we are to have knowledge accumulation. The important thing to remember is that any generalization is only tentative and the next research conducted may find conditions under which the generalization does not hold. By adapting this view, we can begin to specify generalizations and the parameters under which they hold.

The extension of empirical generalizations is theory construction (the attempt to find patterns of relationship between empirical generalizations). There is a need in the field for theory construction in its most fundamental sense -- a beginning attempt at explicit theorizing. Research conducted on communication between people from different cultures needs to be guided by explicit rather than implicit theory. If theory is only implicit there are many assumptions and unconsciously accepted propositions which can indirectly (without the researcher's awareness) influence the interpretation of data. Currently there are only a few attempts at explicit theorizing in intercultural communication (for example, see Gudykunst, 1977; Kim, 1977; Wheeler, 1977; Tyler, 1978; and Howell, in press). It is our view that attempts at theorizing in intercultural communication could profitably begin by adapting theories of communication. For example, the "theories" of writers such as Altman and Taylor (1973), Miller and Steinberg (1975), Berger and Calabrese (1975), and Cushman and Craig (1976) could be modified (i.e., made more general) so that they would not only explain interpersonal communication in one culture, but also communication between people from different cultures.

However the theories are generated, they must be evaluated. Traditionally, theories are evaluated on the basis of logical and substantive adequacy. Logical adequacy involves such standards as logical consistency and completeness,

while substantive adequacy involves the ability of the theory to generate testable hypotheses. Given the current state of theorizing in the field, it is our opinion that the major criteria which should be evoked in testing a theory is its ability to generate testable hypotheses. As the theorizing in the field evolves, then we can begin to demand stricter logical adequacy.

The final phase of inquiry to be discussed is empirical confirmation. The crucial aspect of empirical confirmation is research design. Research in intercultural communication must be carried out such that we ensure that strategic comparisons of evidence are accomplished. This implies that research must have some form of "control" or "comparison" built into the design; without some form of control it is impossible to conclude with any certainity that the results obtained are due to the variables studied, chance, or one of many intervening factors (see Campbell and Stanley, 1963). Further, in setting up our research designs we want to take into consideration the probabilistic, process nature of the phenomenon under study and, therefore, we ideally will use time-series designs (see Glass, Wilson and Gottman, 1975). The important factor to keep in mind is that the research should be designed such that it yields empirical, systematic, comparative and objective information.

In summary, accepting the study of intercultural communication as a social science has many implications. By adapting a social scientific "logic of inquiry" for the field we are recognizing that: (1) the field will be ever-changing (it is dynamic and adaptive), (2) we must go beyond everyday reflections to a more empirical, systematic, comparative, and objective approach to the study of the phenomenon, and (3) we must take into consideration the work of other people in the field and build on it. In addition, the process of inquiry suggests that: (1) we must begin to make empirical generalizations about the phenomenon we are studying, (2) integrate these generalizations into some form of theory, (3) evaluate the theories (initially on their ability to generate

testable hypotheses and eventually on their logical adequacy), and (4) empirically confirm our theories and hypotheses with the rigorous application of good research design and data collection.

Notes

1. Evidence for this exists from the 1978 International Communication Association annual convention. One session on "Methodology in Intercultural Communication" included papers on the "linguistic method", "anthropological method", "statistical method", and "rhetorical method".

2. Smith (1977) has, in fact, argued that the field of intercultural communication is both underdeveloped (i.e., a shortage of research and theory) and underorganized (i.e., no one really knows what the others in the field are doing). The lack of development and organization is probably both a cause and an effect of the lack of institutionalization of the field in academic study.

3. Kurt Lewin's often quoted argument is applicable here. In discussing applied and pure research, Lewin has been quoted as arguing "There is nothing so practical as a good theory".

4. See Gudykunst (1977) for a further discussion of this issue.

5. Smith (1977) suggests that the major research techniques which can currently be used in intercultural communication are anecdotes, interviews, case studies and experiments. Other "methods" which are available to people in the field include surveys, "Interpersonal Process Recall", observation, participant observation, etc. The important point is not what specific method that is employed. Rather, that the method used should be rigorously applied so that objective, useful information is generated.

6. There is no widely accepted set of terms for discussing the issues we address in this section. Therefore, we have been forced to adopt existing terms and use them in deliberately specified senses. In order to denote when terminology is being used in the sense specified in Figure 1 we will underline the terms.

7. The first two listed, ICA and SCA, both deal directly with intercultural communication while SIETAR appears to focus on the more general phenomenon of intercultural relations. In addition, there are "interest groups" in at least two of the regional communication associations which have been recently formed. ICA and SCA appear to serve academicians while SIETAR appears to serve practicioners and practicioner/academicians.

8. The exception, although its not a journal, are the "top 3" intercultural communication papers from the ICA convention which appear in Communication Yearbook.

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